## Biological Weapons as a Strategic Threat

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What are the implications of the proliferation of biological weapons and its effects on changing the world balance of power? This is a chilling subject. I don't think biological weapons had much of an effect on the Cold War, even though there were many of them in the Soviet Union and, early on, in the United States as well.

My first introduction to biological warfare—in which there are probably no experts, only specialists—was when I got a job out of college. I had to go up to a place—I don't even know if it exists anymore—called Edgewood Arsenal, and I had to read something called the Mandrake Route War Game. They locked me in a vault, and I read the study. It was about a biological attack on western Europe, and it was absolutely nauseating and repulsive. When anyone is exposed to biological warfare, he/she has a beginner's mind. Biological warfare is overwhelming in its depressing aspects.

In 1973 I was doing a study for the US Army. At the Aberdeen Proving Ground, they actually had some of the chemical warfare suits that we captured in the 1973 Middle East war. These are chemical suits, not biological protection. We did some experimentation and found out that anyone who wore them for more than two hours would collapse from heat prostration. These were not very effective, and they leaked badly, not a good feature for protective suits. The point of these anecdotes is to suggest that for biological and even chemical weapons, although huge stockpiles were built during the Cold War, they did not have much effect on the balance of world power. Rather, these elements were not in any way, shape, or form integrated into the armed forces of either side.

The Soviets produced a lot of anthrax and other biological weapons, but the average Soviet division was untrained in how to work with them and did not have good protective cover. Biological weapons were kind of an existential deterrent, and that's how I think they were viewed. They were put in the background. This reinforced a strong belief in the policy community in the United States that chemical and biological weapons had a certain opprobrium attached to them, that they had such a stigma that decision makers would never want to use them. Actually, I think this was true in the past, but it's a lot less true

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now. I think biological and chemical weapons will be major features of proliferation because the payoff from them in what I'm going to call the second nuclear age is greater than in the first nuclear age, where I argued that it was pretty low.

I actually lost interest in many national security issues in the 1980s and 1990s and turned my attention to other issues. A couple of years ago my interest was renewed when the Indians tested their nuclear shot in 1998, and I was asked to do a study for the commander in South Korea on the North Korean biological warfare program. It was really quite interesting. I had the same experience as the people who studied the Iraqi program: that it was just so vast, so enormous for an economy that miniature, and somebody has yet to tell me how a country like Iraq or North Korea, which have gross national products (GNPs) of probably about \$20 billion (about one-sixth of the revenues of the General Electric Corporation), can mount these comparatively large scale military programs.

We don't understand the economics of defense spending in these countries because if you look at the nuclear programs in both countries, there are tens of thousands of people suffering from malnutrition. I don't see how they can buy anything except wheat. I mean even oppressing their own populations.

How do I think about these things now, these biological weapons and weapons of mass destruction? I argue that the world is dramatically changing. With all of this focus on globalization, international business, and the Internet bringing countries together, I think there's really another part of it. I believe that's all true, and it's very good, very useful, but we're seeing a spread of weapons of mass destruction and what I call the second nuclear age.

The way to get this notion of the second nuclear age across is to recognize that we're not talking about a handful of rogue states, countries here and there that are resisting the trends toward globalization and acceptance of international arms control norms. We're talking about a significant number of states.

Picture a map of Asia extending from Israel to North Korea, and in that map there is a connected belt of countries, every single one of which is mounting major programs of weapons of mass destruction or ballistic missiles to deliver them.

There's a field in political science that says if you're from a "poly sci" background, you'll know that comparative politics is one of the major fields like international relations or American studies. If you ask what North Korea has in common with Pakistan, what they have in common with Israel or Syria, the answer you'd give is "not very much." Let me tell you one thing they

do have in common. Every single one of those countries is building weapons of mass destruction and missiles.

Take Israel, for example. Who knows exactly what her program is, but there's very strong evidence that she has biological and chemical programs. Syria—it's well known that she does. Iraq—we have the best information on Iraq because Iraq lost the war, and we sent inspectors in. We don't know much about Pakistan, India, and China. I personally would be amazed if they did not have major programs. There is not a lot of hard intelligence to support that conclusion. However, after all, we have to be realistic about what intelligence can give us.

My argument is that the world is entering a second nuclear age, that a lot of countries, the ones I've mentioned, are building weapons of mass destruction and the missiles to deliver them. What's distinctive about the second nuclear age is how little it has to do with the first nuclear age. It has nothing to do with the NATO-Warsaw Pact battle in Europe and NATO, which is what got the United States and the Soviet Union into this arms race with these kinds of weapons. I think it is accurate, in a strange way, to think about this as a restoration of the dynamic aspects of Asian civilization. You can write a pretty good history of the past 1,000 years by saying the West established manufacturing and farming technology first, followed by commercial technology, and military technologies and used this as a source of domination for the entire world. Well, those technologies are now spreading. They can no longer be retained by a Western monopoly of countries, including the Soviet Union, now Russia, as a Western country, but they're spreading, I think, fairly rapidly.

As to the motivations for this, one can use an arms control framework in which building biological weapons is a bad thing to do. However, I ask you for a moment just to suspend those frameworks and see what it looks like if you're a country such as Iraq or Iran. You're faced with the world's only superpower, the United States, and if you are to challenge the United States head on using laser-guided bombs and stealthy aircraft, it presents impossible problems for you to solve technologically and economically. You couldn't possibly do it. The way to understand why countries are building weapons of mass destruction is just to look at local business practice, to understand that if a company were to challenge IBM or AT&T, they wouldn't do it with the same skill sets that the dominant players have.

Many of these technologies have an unusually large, disruptive effect on American advantages, for example, putting a biological weapon on a ballistic missile, a very simple thing to do. (We can get into an argument about whether it's easy or not to do, but to put it on there—I didn't say to make it work, but to put it on there—is easy.) It changes dramatically the balance of power in the world for the following reason: The United States, following a long tradition of Western outside powers in Asia, has built its military prowess on a small number of bases, such as Okinawa, Guam, Diego Garcia, and South Korea. To render those bases vulnerable, to render them at risk, only takes a handful of missiles. Consider what's happening now. The United States is about to go into at least a theater ballistic missile defense program designed to protect bases in Asia. My calculations roughly show that for every \$1 in offense these rogue nations spend, you can force the opponent to spend \$12. This means that puny countries like North Korea and serious countries like China are forcing the United States into this expenditure of about 12:1 to defend a US Marine base in Okinawa. I think this is unsustainable politically and economically in the United States, and I anticipate that the United States will put a lot less emphasis on military bases in the future. However, I offer that as an example of the changing balance of power in the world. The United States is not going to have the base presence in Asia that it has had for the past 50 years. Indeed, there's even a question about the survival of more mobile forces, but that would require technologies that are a little further off into the future.

A few other points renewed my interest in this subject and show how things are different in this second nuclear age. One way in which they are the same, however, is that in both cases you have huge command and control problems; that is, how do you maintain control so that weapons are fired only when you want them to be and they are not so vulnerable that they draw fire from the other side, causing accidental or inadvertent war? That's a real consideration if you look at the Pakistani and the Indian forces. In some cases, their weapons of mass destruction are stockpiled in a very small number of bunkers, almost suggesting that they draw fire. However, these were problems of the first nuclear age, the US-Soviet competition, and I think they are also problems of the second nuclear age, but they're a lot worse now. The United States and the Soviet Union spent hundreds of billions of dollars to lock up their weapons, protect them, guard them, and run very realistic simulations and war games. In my view, the arsenals were safe but only because they spent a lot of money to make them safe. It's unimaginable to me that this would happen with North Korea, Pakistan, or even, frankly, Israel: that

they would spend anything like a proportion of their defense budgets on securing these systems.

I think something we often forget when we look at proliferation as a kind of abstract phenomenon is that leaders matter, a lesson from the first nuclear age. The individual personality of the head of state, when in a crisis or is making decisions about what weapons to acquire, has a profound impact. These are not autonomous technologies. The French never would have built nuclear weapons had they not had De Gaulle as president in the late 1950s. I don't think North Korea or Iraq would have had the program they had if they did not have Kim Il Sung or Saddam Hussein, respectively, as leaders. Thus, we have to factor in the personality of leaders when considering these matters.

One of the differences between the era we are now entering and the Cold War competition from previous years is the role of nationalism. In waging the Cold War, public opinion in the United States and the Soviet Union had relatively little to do with the behavior of the states in a crisis. There was a lot of play to public opinion about bomber gaps and missile gaps with respect to weapons acquisition programs. However, in situations like the Cuban missile crisis and the 1973 Middle East war, leaders could look at how the national interest was almost divorced because the public wanted them to dampen the crisis. I think that's much less likely to be true in the weapons-proliferating countries that I've been discussing. Indeed, one of the premier features of the Cold War was this kind of icy rationality that was used to wage it. We had think tanks like the Rand Corporation and the Hudson Institute using models loosely based on game theory, the kind of paradigm of icy rationality in which you calculate your move six and seven steps ahead and find equilibrium points. I just think that's very unlikely to govern the behavior of a North Korea, a Syria and, again, frankly, an Israel, which is embedded in this network of states like them.

So when I try to figure out what it all means, what to think about biological weapons, I believe that, unlike in the first Cold War, the first nuclear age, biological weapons truly are having a major effect on changing the balance of world power, because the social norms attached to using them are quite different. Iraq had integrated chemical and biological warfare into its military forces. The Iraqi program was truly frightening. The Iraqis had anthrax in scud warheads ready to go. They had predelegated launch authority to some of their commanders such that, if the United States went into Baghdad, they would have the automatic authority to launch. At the end of the war, it was quite interesting—if you read Victor Hasselkorn's book—

how Iraq was sending a signal that if the war continued they might bombard Israel with biological weapons.

I think the norms, unlike in the first nuclear area, are radically different and incline one toward greater use and greater acceptance because of this kind of anti-Western nationalism that you find in much of Asia. It goes something like this: You guys have all the big technology, the aircraft carriers, and the Stealth bombers. So it's fair for us to use these cheaper, poor man's nuclear weapons like biological weapons.

I'm not predicting a nightmare future. The future, I learned a long time ago, hasn't happened yet. It's up to us to shape that future, but I would be very suspicious of arguments that say globalization and interna-

tional norms of a Western variety are spreading so fast that they will drive our proliferation. A better, more empirical description of what's happened in the last few years, it seems to me, is what the economists call a "wealth effect." As countries' GNP increases, some of it spills over into the military. Not surprisingly, when India gets richer, it builds more nuclear weapons and probably more biological weapons. That's harder to apply to North Korea and Iraq, but, as I said earlier, I'm not sure how to think about the economies of those countries. I see just a gradual build-up in proliferation. Whether or not there's a war depends on a whole set of factors, but war is not the thing to look at. The issue to look at is the spread of the weapons.